

Warm up: What are the slopes of these lines?

Line 1: $(-6, 4)$
 $-(-4, 8)$
 $m = 2$ $\frac{-2 \mid -4}{\hookrightarrow -2} = \frac{4}{2} = 2$

Line 2: $(3, 5)$
 $-(9, 2)$
 $m = -\frac{1}{2}$ $\frac{-6 \mid 3}{\hookrightarrow -6} = \frac{-3 - 1}{6} = -\frac{1}{2}$

Section 3.4 - Slope of Parallel & Perpendicular Lines Target 3G

Goal:

Determine if lines are parallel or perpendicular based on their slopes.

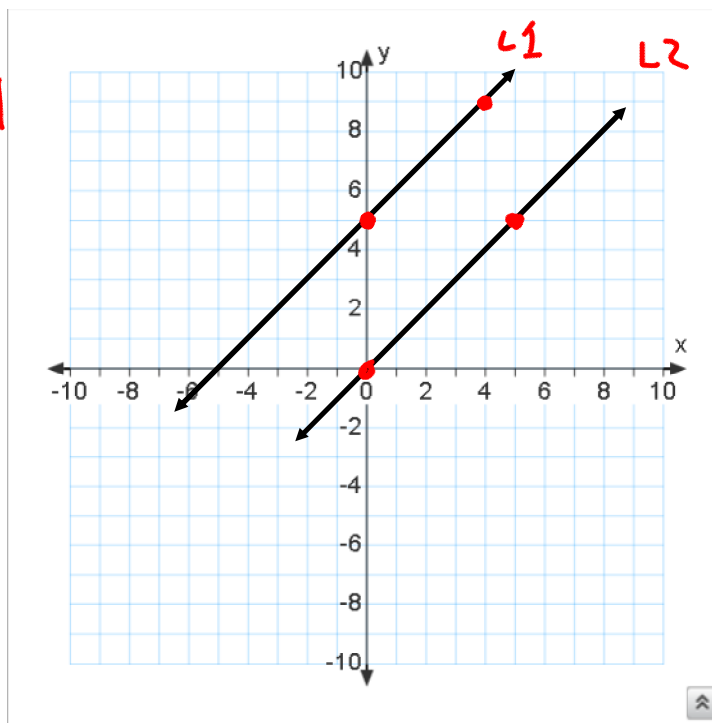


Postulate:

In a coordinate plane, two nonvertical lines are parallel if and only if they have the same slope.



$$L1 \ m = \frac{4}{4} = 1$$
$$L2 \ m = \frac{5}{5} = 1$$



Section 3.4 - Slope of Parallel & Perpendicular Lines Target 3G

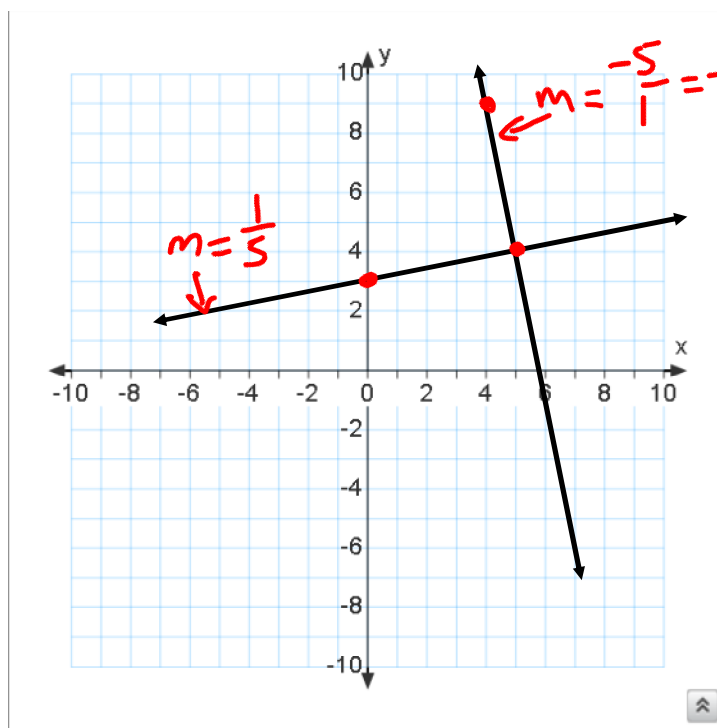
Postulate: In a coordinate plane, two nonvertical lines are perpendicular if and only if the product of their slopes is -1.

SLOPES ARE
OPPOSITE
RECIPROCAL

$$m = \frac{3}{4}$$

$$m = -\frac{4}{3}$$

$$m = -3 \quad m = \frac{1}{3}$$



Section 3.4 - Slope of Parallel & Perpendicular Lines Target 3G

Ex: Are the
 \perp
 neither?

Line 1: $(-5, 6)$
 $(-2, 2)$

Line 2: $(4, 2)$
 $(-7, 6)$

$$m = \frac{2-6}{-2-5} = \frac{-4}{-7} = \frac{4}{7}$$

$$m = \frac{2-6}{4-(-7)} = \frac{-4}{11} = -\frac{4}{11}$$

NEITHER: THEY AREN'T \parallel BECAUSE
 ONE IS + AND THE OTHER IS -.
 THEY AREN'T \perp BECAUSE THEY
 AREN'T RECIPROCAL

